Thanakorn Chanmalee 2014: Variation of Root-Knot Nematode Infecting Chili in Thailand. Master of Science (Agriculture Biotechnology), Major Field: Agriculture Biotechnology, Interdisciplinary Graduate Program. Thesis Advisor: Ms. Orawan Chatchawankanpanich, Ph.D. 70 pages.

Fifty soil samples and root knots surrounding infected chili were collected from 10 provinces. They were Chiang Mai, Lamphun, Tak, Khon Kaen, Phetchaburi, Srisaket, Suphan Buri, Ubon Rachatani, Uthai Thani and Songkla. Thirty four samples were classified in tropical species by PCR with 194/195 primers. Nine samples were not classified in tropical species, and it might be *Meloidogyne mayaguensis* according to nucleotide sequences. While, seven samples gave negative result with PCR, so they were unidentified samples. Only tropical species were further used for identification in species level by perineal pattern and PCR with specific primers for *M. arenaria*, *M. incognita* and *M. javanica*. From identification of perineal pattern, twenty eight samples were identified as *M. incognita* and six samples were identified as *M. javanica*. In contrast, twenty seven samples were identified as *M. incognita* and five samples were identified as *M. javanica* by PCR. While, two samples from Chiang Mai (CM6) and Ubon Ratchathani (UB6) gave negative result, so they were not be identified by PCR. In this study, *M. arenaria* was not detected to be a causal agent of root knot disease of chili in Thailand. Samples identified as *M. incognita* and *M. javanica* by both perineal pattern and PCR were used for sequence analysis. Samples identified as *M. incognita* were samples from CM1, CM5, LP1, TK1, TK2, TK5, TK6, TK7, TK8, TK10, TK12, TK13, TK16, TK17, KK1, SK2, SP1, SP2, SP3, SP4, UB3, UB4, UB5, UB7 and UB8. Four samples from CM4, SKH1, SKH2 and SKH3 were identified as *M. javanica*. According to sequence analysis and phylogenetic tree, the genetic variation was not found in population of *M. incognita* and *M. javanica* infecting chili in this study.

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